PV INSTALLATION FORM

Site Address	
Date	

PV Installation Forms (NSHP PV-2) are required for each installed PV system. When the installation is complete, the PV installer must perform the field verification and diagnostic testing procedures as specified in the New Solar Homes Partnership Guidebook, Appendix B. The PV installer shall also provide a copy of the Installation Form and any other proof of installation details (such as photographs, product invoices, or shading diagram(s)) to the HERS Rater so that they are able to verify the installation, performance and shading specifications.

PHOTOVOLTAIC SYSTEM:

Equipment Type	SB1 Eligible Manufacturer Name and Model Number					✓ Indicate Pass/Fail
Meter (Must be built into inverter or listed as CEC eligible.)						☐ Pass ☐ Fail
Inverter (Must be same as listed on NSHP PV-1.)						☐ Pass ☐ Fail
PV Modules: (Must be same as listed on NSHP PV-1.)						☐ Pass ☐ Fail
☐ Rack-mount ☐ BIPV	Number of Series modules in each string		Number of Parallel strings		Total number of Modules	☐ Pass ☐ Fail

Installation Specifications		Method used to determine value	Value measured	Value within tolerance of NSHP PV-1 value.
1	The azimuth of the installation. (degrees from North)			☐ Pass ☐ Fail
2	The roof pitch/tilt of the installation. (Rise:Run / degrees from horizontal)			☐ Pass ☐ Fail
3	The mounting height of the installation (one story, two story, or actual height in feet from ground) (Pass if measured value is greater than value on NSHP PV-1)			☐ Pass ☐ Fail
4	The standoff height of the array from the roof. (If BIPV or ground mount, enter 0.) (Pass if measured value is greater than value on NSHP PV-1)			☐ Pass ☐ Fail

Performance Specifications		Method used to determine value	Value measured	Value within tolerance of NSHP PV-1 value.
5	Measurement of solar irradiance. (W/m^2)			
6	Measurement of ambient temperature. (°F)			
7	Expected output from Field Verification Table (FVT)* (W)	FVT		
8	The electric production (W) as shown on the inverter or other performance display.			[Value of line 8 > line 7] ☐ Pass ☐ Fail

* FVT is generated by the CEC PV Calculator and is unique for each system. FVT values are for an unshaded array. The FVT for this system is on the corresponding NSHP PV-1

Site Address

Shading Specifications		Value measured	Value within tolerance of NSHP PV-1 value.
9	Was the "Minimal Shading" option used on the NSHP PV-1?		☐ Yes ☐ No
10	The minimum distance-to-height ratio (2:1) criteria is met for all existing and planned trees or are accounted for in the calculation and based on the mature height from the appropriate height category (small, medium, large).	[See table below]	☐ Pass ☐ Fail
11	The minimum distance-to-height ratio (2:1) criteria is met for all other shading obstructions** or are accounted for in the calculation.	[See table below]	☐ Pass ☐ Fail

** As indicated in Appendix B of the NSHP Guidebook, obstructions subject to the Minimal Shading criterion include:
  i.   Any vent, chimney, architectural feature, mechanical equipment or other obstruction that is on the roof or any other part of the building.
  ii. Any part of the neighboring terrain.
  iii. Any tree that is mature at the time of installation of the solar energy system.
  iv. Any tree that is planted on the building lot or neighboring lots or planned to be planted as part of the landscaping for the building (the expected shading must be based on the mature height of the tree).
  v.   Any existing neighboring building or structure.
  vi. Any planned neighboring building or structure that is known to the applicant or building owner.
  vii. Any telephone or other utility pole that is closer than thirty feet from the nearest point of the array.

In-field Shading Confirmation Table	Method 1		Method 2				Value confirmed by: (tape measure, photo, etc)
Compass Sector	✓ if "Minimal Shading"	Obstruction Type	Altitude Angle	Horizontal Distance	Height Difference	Distance-to-Height Ratio	
ENE [>55 to 79]	☐						
E [>79 to 101]	☐						
ESE [>101 to 124]	☐						
SE [>124 to 146]	☐						
SSE [>146 to 169]	☐						
S [>169 to 191]	☐						
SSW [>191 to 214]	☐						
SW [>214 to 236]	☐						
WSW [>236 to 259]	☐						
W [>259 to 281]	☐						
WNW [>281 to 305]	☐						

List of items submitted accompanying the installation certificate as proof of installation (such as photographs, product invoices, or shading diagram(s)). These items are intended to assist the HERS rater so that they may verify the installation, performance and shading specifications.

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-	-
-	-

✓ ☐   I, the undersigned, verify that equipment listed on this form is:
1) The actual equipment installed, 2) that specified in the CECPV Calculator Output Form (NSHP PV-1) which was submitted for incentive eligibility under NSHP. And that the shading criteria are as specified in the NSHP PV-1.

Installing Subcontractor (Co. Name) OR General Contractor (Co. Name) OR Owner	
Signature:	Date:

Copies to: BUILDER / HOMEOWNER, NSHP APPLICANT, HERS RATER

Instructions for completing In-field Shading Confirmation Table

For each *Compass Sector*, check the box if *Minimal Shading* has been specified and verified for that sector.

If a compass sector has been specified to have shading or does not qualify for *Minimal Shading*:

1. Enter the *Obstruction Type* (e.g. tree, vent, neighboring structure).

2. Choose either Method 1 or Method 2 to enter the information about the obstruction. You do not need to complete both methods.

3. For Method 1, enter obstruction *Altitude Angle*.

4. For Method 2:

    a. Enter the *Horizontal Distance* from the nearest point on the array to the obstruction. For trees, measure to the nearest edge of the trunk.

    b. Enter the *Height Difference* from the nearest point on the array to the highest point on the obstruction. For obstructions not on the roof, the *Height Difference* is the height (from the ground) of the highest point on the obstruction minus the mounting height (from the ground) of the array. For obstructions on the roof, the *Height Difference* is the height (from the roof) of the highest point on the obstruction minus the mounting height (from the roof) of the array.

        Use the following mature tree heights for each height category:
           Small – 20 feet
           Medium – 35 feet
           Large – 50 feet
           Tree currently taller than 50 feet - actual height measured on site

        Use the following mounting heights:
           One-Story – 12 feet
           Two-Story – 22 feet
           Specific height shown on CF-1R-PV – actual height measured on site

    c. Enter the *Distance-to-Height Ratio*.

5. Enter the tool used to make the measurement or verification (e.g. tape measure, photograph).